



ENVIRONMENTAL REVIEW
FOR CLEAN WATER SRF LOANS
Water Division/Wastewater Engineering Bureau



RSA/Rule: Env-Wq 508

I. PROJECT APPLICANT

Town of Newmarket

ADDRESS

8 Young Lane
Newmarket, NH 03857

PROJECT

New Road Stormwater Improvements
Rockingham County

SRF PROJECT NUMBER

CS-330162-08

II. INTRODUCTION

The Town of Newmarket, New Hampshire has applied for a Clean Water State Revolving Fund (CWSRF) loan through the State of New Hampshire Department of Environmental Services in accordance with provisions of Chapter Env-Wq 500 rules of the department. These rules prescribe procedures for the application process concerning the CWSRF of the department. This document will discuss the requirements of Part Env-Wq 508 of these rules, the environmental review.

III. BACKGROUND

The Town of Newmarket currently experiences flooding on New Road and downstream properties. The Town also continues to experience flooding along NH Route 108, which has increased over the years due to incremental development, tidal influence at the Lamprey River, and increased rainfall/storm events. Drainage from the New Road area has also contributed to flooding in the downtown area during past storm events (May 2006 and April 2007). This flooding damages lawns, driveways, and roadways, and causes erosion to properties. Flooding also has the potential to cause sewer backups and discharges to local waterways. Additionally, a flooding analysis was performed in June 2016 for the nearby Moonlight Brook Watershed. It was determined that re-routing the New Road drainage to the Lamprey River instead of towards NH Route 108 would reduce peak flows in that area and reduce flooding along New Road.

The following document concerning the stormwater improvements has been developed and is available for public review:

- **Stormwater Management Report, New Road Drainage Improvements, Newmarket, New Hampshire** – Underwood Engineers, Inc., March 2018

christina.buckman@des.nh.gov or phone (603) 271-0734
PO Box 95, Concord, NH 03302-0095
www.des.nh.gov

IV. PURPOSE AND NEED

The existing drainage infrastructure consists of a cross-country drainage system extending through private property and under residential structures. The existing system is undersized and exceeds 70 years of age, and is therefore considered obsolete. Due to the system's impairment, significant flooding occurs along New Road and NH Route 108. Additionally, stormwater controls or treatment systems do not exist. This project intends to address these issues in order to alleviate the flooding that this area experiences by installing new stormwater conveyance and treatment systems. This will provide the opportunity to direct approximately 40 acres and 40 cubic feet per second (50-year storm) of stormwater away from NH Route 108 and the downtown area. This project will also introduce stormwater treatment as stormwater is currently discharged to the Lamprey River without treatment.

V. ALTERNATIVES ANALYSIS

The "No Action" alternative was considered but discarded, since flooding problems would continue and likely increase over time as storm events worsen.

Several alternatives for treatment options and outfall locations were considered and discussed with the NHDES Wetlands Bureau and Alteration of Terrain during a pre-application meeting.

The following treatment option alternatives were considered:

- BMP #1 – biofiltration basin near the end of Young Lane. This alternative was not chosen due to a high wetland impact area.
- BMP #2 – biofiltration basin near the end of Young Lane on NHFG property. This alternative was not chosen due to requiring a special use agreement, tree clearing to undisturbed areas, and new shoreline impacts.
- BMP #3 – biofiltration basin near the end of Young Lane near the WWTF. This alternative was not chosen due to a conflict with a proposed generator and transformer at the WWTF.
- BMP #4 – detention-only basin (i.e. no stormwater treatment) located near the Route 108/New Road intersection on private property. This alternative was not chosen due to easement requirements, not addressing flooding in the downtown area, and no stormwater treatment capabilities.
- BMP #5 – biofiltration basin located south of the WWTF and east of the Fire Department. This alternative was not chosen due to high shoreland impacts, difficult excavation conditions, difficult maintenance access, and greater cost.
- Selected BMP – gravel wetland located near the Young Lane/New Road intersection and bioretention area near the Fire Department off Young Lane. These alternatives were selected as they reduce permanent impact and provide stormwater treatment.

The following outfall location alternatives were considered:

- BMP #1 – near the WWTF Access Road. This location was not selected as new NHDES wetlands policy does not allow stormwater treatment to occur within wetlands.

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- BMP #2 – on a NHFG parcel. This location was not selected as NHFG noted this parcel would require significant documentation and approval for conditional use of the site, of which may not be acceptable to NHFG.
- BMP #3 – near the WWTF Access Road. This location was not selected as it conflicts with the location of a generator and transformer being installed as part of WWTF improvements.
- BMP #4 – near the Route 108/New Road area. This location was not selected as it involves stormwater detention on private property which would require challenging easement agreements and does not reduce stormwater volume to the Moonlight Brook watershed.
- BMP #5 – just south of the WWTF and east of the Fire Department. This location was not selected due to high shoreland impacts, difficult excavation conditions, difficult maintenance access, and greater cost.
- Selected BMP – an outfall was selected near the WWTF along the Lamprey River Tidal embankment. This location was selected as it will reduce flooding, erosion, and pollutants to the Lamprey River, impact less Shoreland Protection area, impact less private properties, reduce permanent impacts, and the tidal embankment of which this outlet will be located was previously lined with rip-rap and will be restored to engineered specifications.

VI. DETAILS of PROJECT

The proposed project consists of the following:

1. Stormwater drainage system replacement
 - The existing drainage pipe sizes vary from 8", 12", and 24" and consists of various materials, including PE, CMP, HDPE, CI, and PVC.
 - The proposed project involves installation of approx. 3,000 feet of new drainage pipe. The new pipe sizes will range from 6", 12", 15", 18", and 24" and consist of either PE, Perforated PE, and RC pipe material.
2. Construction of a new stormwater outfall
 - Located on the Lamprey River Tidal embankment behind the WWTF.
 - Perforated 18" PVC pipe that ultimately discharges to the Lamprey River.
 - The proposed outfall will be a subsurface perforated discharge pipe which is intended to function by distributing flow into the stone embankment. The stormwater will flow downslope through stones to the Lamprey River.
 - Approximately 50 LF of temporary impacts to the Lamprey River embankment are anticipated. A silt boom will be installed to prevent sediment from entering the Lamprey River.
 - No impacts to the tidal flat are anticipated. Silt and orange construction fencing will be located above the mean high tide line to prevent construction activities within the tidal flat.
 - No tree removal will be necessary along the embankment, and the stone embankment will be regraded following pipe installation.

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3. Construction of a drainage outlet area
 - The drainage outlet area will be located behind the WWTF on the Lamprey River Tidal embankment.
4. Construction of a bio-retention area
 - ~2,000 SF bio-retention area located off Young Lane near the Fire Department.
 - Purpose is to collect runoff from the Fire Department parking lot and provide pre-treatment prior to entering the drainage system and final discharge to the Lamprey River.
5. Construction of a gravel wetland
 - ~11,000 SF gravel wetland located near the Young Lane/New Road intersection.
 - Includes a water quality unit for pre-treatment of runoff prior to discharge to the gravel wetland.
 - Approximately 6 trees will be removed.
 - The Town secured a perpetual easement to construct the gravel wetland in June 2017.
 - Purpose is to reduce suspended solids, nitrogen, and phosphorous from entering the Lamprey River and the Great Bay.
6. Water system replacement
 - Installation of approx. 1,800 feet of new 8"-10" ductile iron water main.
 - Installation of appurtenances and hydrants.
 - Installation of new water service connections (approx. 560 linear feet).
7. Approx. 2,000 linear feet of roadway reconstruction
 - New Road from Route 108 to Great Cove Road

Open trench methods will be used for the drainage infrastructure improvements and the water infrastructure improvements. The existing drainage infrastructure will either be abandoned in place, removed, or retained. Removal of AC pipe is not anticipated.

The area of total disturbance will be approximately 67,000 square feet. All areas disturbed will be restored to an equal or better condition and are temporary in nature. There will be no culverts installed on perennial streams. Tree clearing along the roadway will be minimal (~0.1 acre), as the majority of the work will be under pavement or in already disturbed areas.

The total project cost for the proposed project is estimated to be \$2,139,025.

VII. ENVIRONMENTAL CONCERNS AND MITIGATION

The environmental concerns of the project are minimal. No adverse environmental impacts are anticipated from the project. The primary impacts are short-term impacts which will affect the area only during the period of construction. The following categories of impacts will illustrate the potential negative and positive effects anticipated from the project:

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Air: Air impacts will be limited to some dust created during the construction portion of the project. Dust will be prevented and controlled through the use of water or dust retardant chemicals. No long-term air impacts are anticipated; mitigation measures will be employed if needed.

Noise: The noise from construction activities will be heard by the residents in the area, but should be limited in duration. Noise impacts, if encountered, will be minimized by scheduling work to reduce effects in the area. No long-term noise impacts are anticipated.

Surface Water, Groundwater, Wetlands, and Shoreland: There should be no significant groundwater impacts from the project. Temporary impacts to the Lamprey River embankment and other minor wetland impacts have been permitted by the NHDES (Shoreland File #: 2018-00035, Wetlands File #: 2016-03474, and Alteration of Terrain Permit #: AoT-1429) and the Army Corp of Engineers.

A NPDES Construction General is required, and a SWPPP will be required by the Contractor prior to construction. Erosion will be minimized by using proper erosion control methods permitted by NHDES, including discharge mitigation, erosion stone and stabilization of the Lamprey River embankment and other accepted practices such as silt fence installation along wetland areas adjacent to the roadway and rapid re-seeding of affected areas. Best management practices will be employed in this effort.

Floodplain: The limits of construction do not fall within a floodplain. That being said, the main goal of this project is to reduce flooding, erosion, and other related impacts to properties along New Road, and to reduce stormwater volumes and pollutants downstream to the Moonlight Brook discharge in the downtown area.

Designated River: This project falls within the Designated River corridor of the Lamprey River. The Lamprey River Advisory Committee (LRAC) reviewed the project and provided comments to NHDES in November 2017. Comments were satisfactorily addressed in March 2018.

Plants & Wildlife: A Natural Heritage Bureau (NHB) DataCheck has been conducted. The results report a number of natural communities and plant species of concern: Low brackish riverbank marsh, Sparsely vegetated intertidal system, Subtidal system, Atlantic mudwort, Eastern grasswort, Perennial saltmarsh American-aster, and Seaside brookweed. Additional information was requested by, and submitted to, the NHB. Upon further review it was determined that Perennial saltmarsh American-aster would not be likely to occur within the project area. The remaining plant species (Atlantic mudwort, Seaside brookweed, and Eastern grasswort) could occur within the tidal mudflat impact area. Surveys were recommended to occur during the following timeframes:

- Atlantic mudwort: identifiable vegetatively from May 1 – October 15; flowering July 31 – October 1
- Seaside brookweed: identifiable vegetatively (basal rosette visible) during all seasons; flowering July 20 – September 29

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- Eastern grasswort: identifiable vegetatively from May 1 – December 15; flowering July 1 – September 15

Per the recommendations from the NHB, a survey was performed by a qualified botanist with experience identifying tidal wetland plants in July and again in September 2021. GPS coordinates were collected to identify the western boundary of the plants. As a result, no plant species of concern were identified within the project limits. However, they are located nearby and protection of the plants and their habitat were included in the project design and specifications.

The NHB has also provided guidance regarding documentation of any species observed within the project area and has requested that they be contacted immediately if any rare plant species are found during surveys so that they can determine appropriate mitigation measures. NH Fish and Game has also reviewed the project and had no further comments.

Voluntary conservation measures will be employed, where appropriate, in order to reduce impacts to the Northern Long-eared Bat as outlined under item 2 on page 3 of this document: <https://www.fws.gov/midwest/endangered/mammals/nleb/pdf/S7FrameworkNLEB17Feb2016.pdf>

Recreation and Historic: The Division of Historical Resources has reviewed the project. The results indicate there is no potential to cause effects, however archaeological monitoring is required during trenching adjacent to the Lamprey River. The Contractor will be required to hire an archaeologist for monitoring as part of the bid.

Social and Economic: The social and economic impacts from the project are expected to be favorable. The financial impact on the ratepayer may be reduced for this project through the use of the State Revolving Loan Fund as opposed to other funding sources.

Whereas this project constitutes only a minor project and no significant environmental impacts are anticipated, a Finding of No Significant Impact (FONSI) is proposed.

VIII. INTERGOVERNMENTAL REVIEW

Results from the Intergovernmental Review, coordinated by the New Hampshire Office of Strategic Initiatives, were received on June 22, 2021. The results indicated presumed concurrence with the proposed project.

IX. PUBLIC REVIEW

The Town voted to authorize funding in the amount of \$1,000,000 for this project on September 5th, 2012.

A public notice will be published by the Town of Newmarket and a thirty-day public comment period will be held in accordance with the CWSRF rules.

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